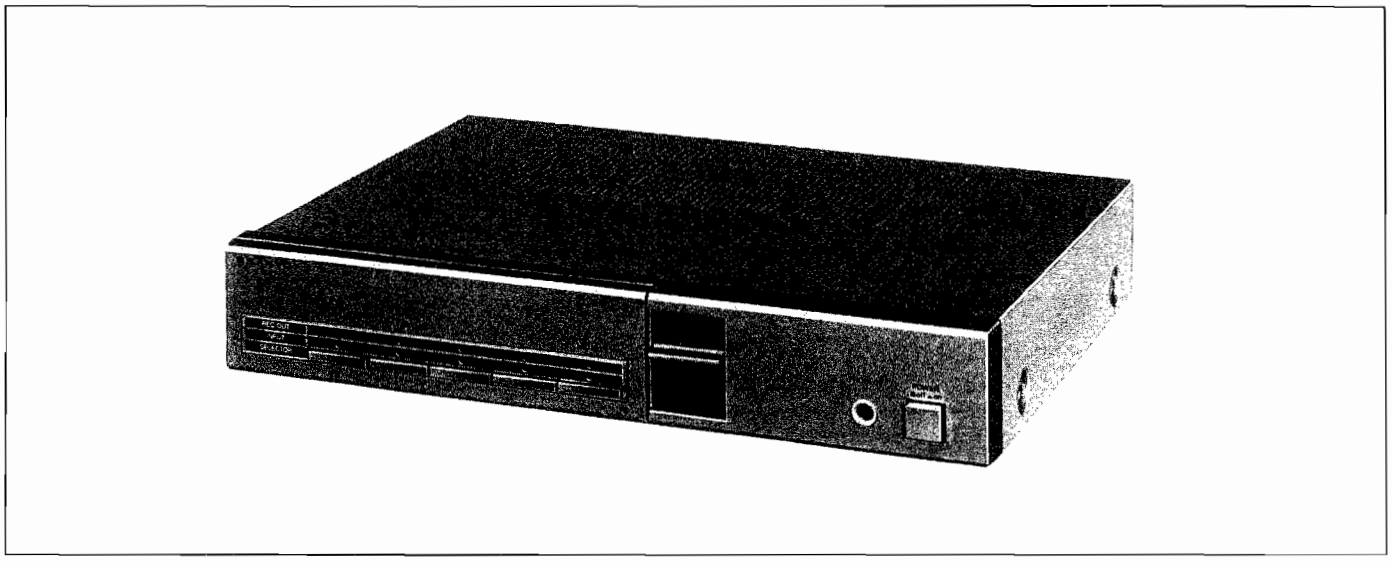
SERVICE MANUAL

STEREO INTEGRATED AMPLIFIER

SANYO

A33

(EUROPE)



SPECIFICATIONS

NOTE:

The below mentioned specifications are mainly based on the IHF measurements standard. They can therefore not directly be compared with specifications based on the DIN standard or other standards.

Continous output power	25 W x 2 (at 8 ohms, 0.09% distortion)
Total harmonic distortion	0.03% (10 W output, 8 ohms)
Input sensitivity and impedance	
MIC	2 mV/10 kohms
PHONO	2.5 mV/47 kohms
TUNER/(TV/AUX)/TAPE PLAY	150 mV/47 kohms
Phono overload level	70 mV RMS (at 1 kHz)
Output level	
TAPE REC	150 mV
Frequency response	± 1.0 dB (20 Hz – 20 kHz) (TV/AUX)
Tone control response	
BASS	±8 dB (at 100 Hz)
TREBLE	±8 dB (at 10 kHz)
Subsonic filter response	30 Hz (–6 dB/oct.)
Loudness control response	
100 Hz/10 kHz	+8 dB/+4 dB
Signal to noise ratio	
PHONO	73 dB
TUNER/(TV/AUX)/TAPE PLAY	90 dB
Power requirements	AC: 110/220V, 50 Hz
Power consumption	150 W
Dimensions (Approx.)	335 (W) x 260 (D) x 62 (H) mm (13-1/4" x 10-1/4" x 2-1/2")
Weight (Approx.)	4 kg (9 lbs.)

* Specifications subject to change without notice.

ADJUSTMENT

- **BIAS ADJUSTMENT**

Condition of adjustment:

No-load state

Main volume in the minimum position

(1) Connect a DC (digital) voltmeter to both ends of R750 (0.33 ohm).

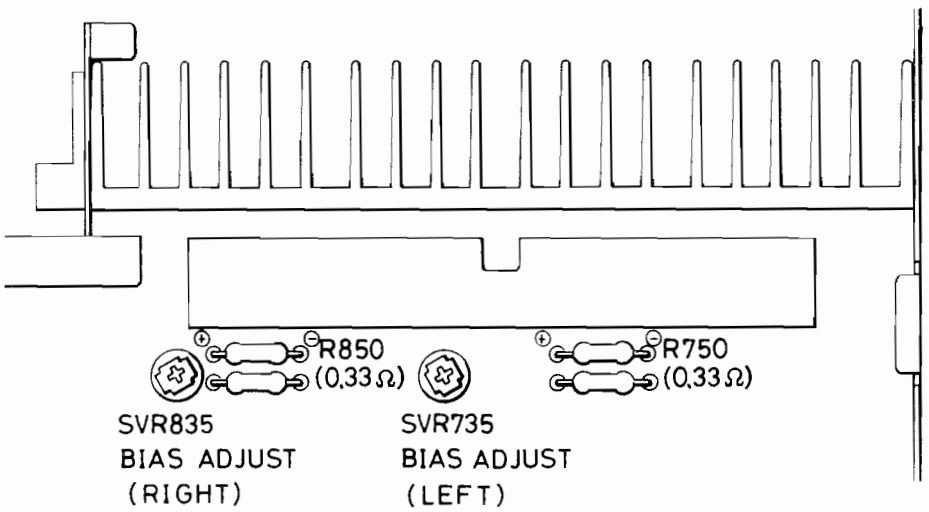
(2) Adjust SVR735 so that the voltmeter indication becomes 2.0 ± 0.1 mV.

(3) Similarly connect the voltmeter to both ends of R850 (0.33 ohm), and adjust SVR835 so that the indication becomes 2.0 ± 0.1 mV.

(4) After the lapse of two to three minutes, readjust SVR735 and SVR835 so that the voltmeter indication becomes 1.0 mV and 0.9 to 0.1 mV, respectively.

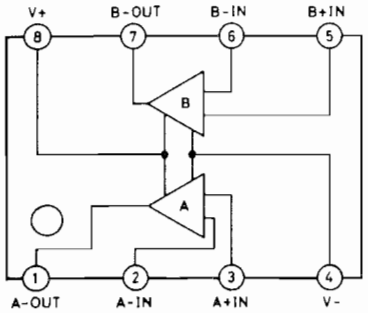
Note: Since the temperature condition for this set is severe because of the thin type, perform bias adjustment particularly carefully.

PARTS LOCATION

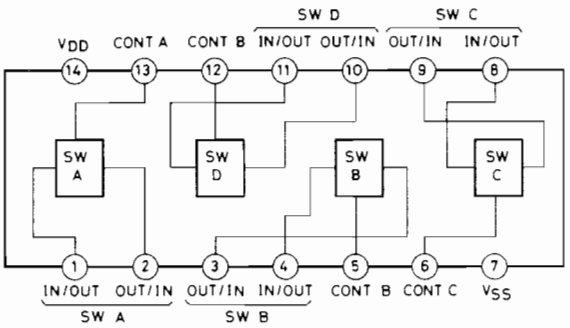


BLOCK DIAGRAM

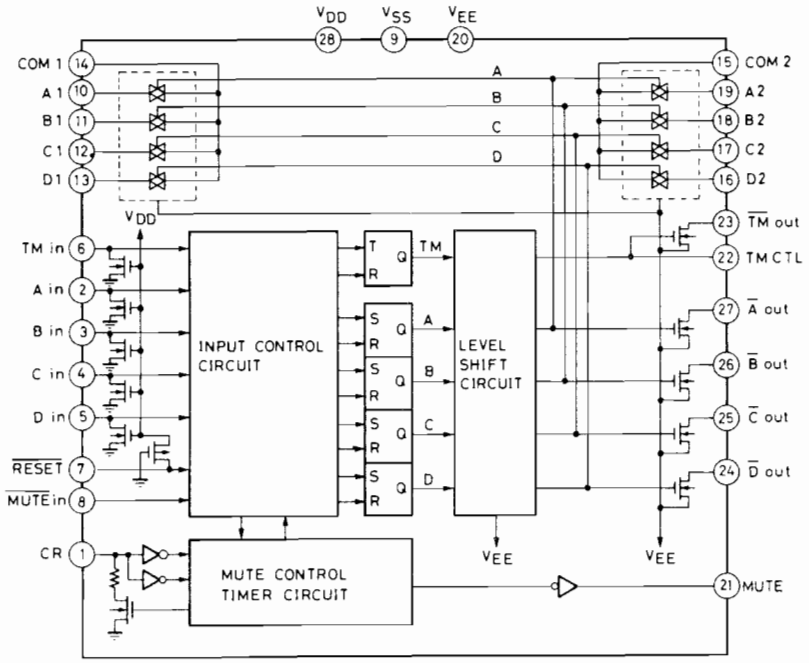
IC701, 721 LA6458DS
(or NJM4558DD)
DUAL OPERATIONAL AMPLIFIER



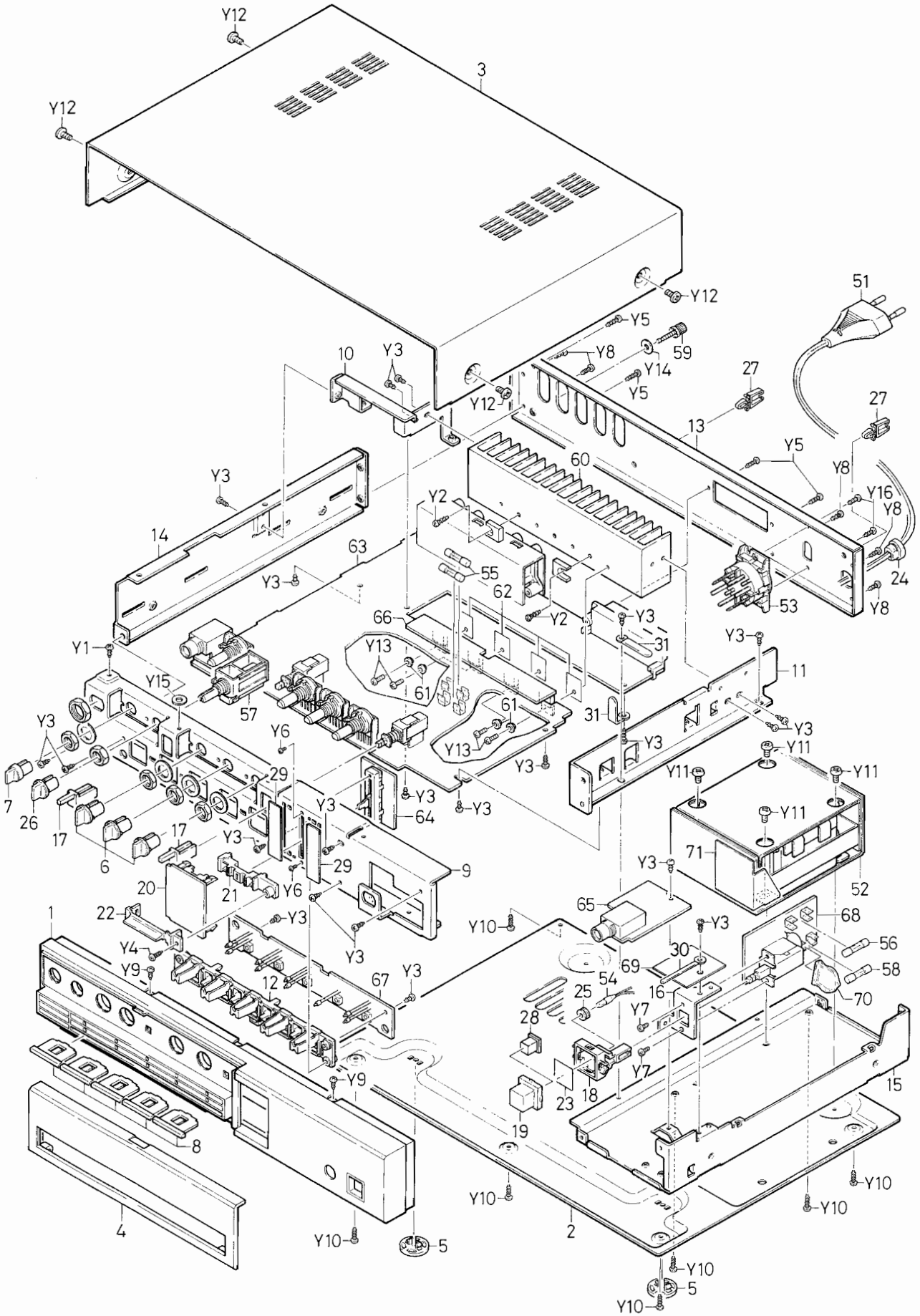
IC722 LC4066B
(or TC4066BP)
QUAD BILATERAL SWITCH



IC711 LC7815
ANALOGUE FUNCTION SWITCH



EXPLODED VIEW (CABINET & CHASSIS)



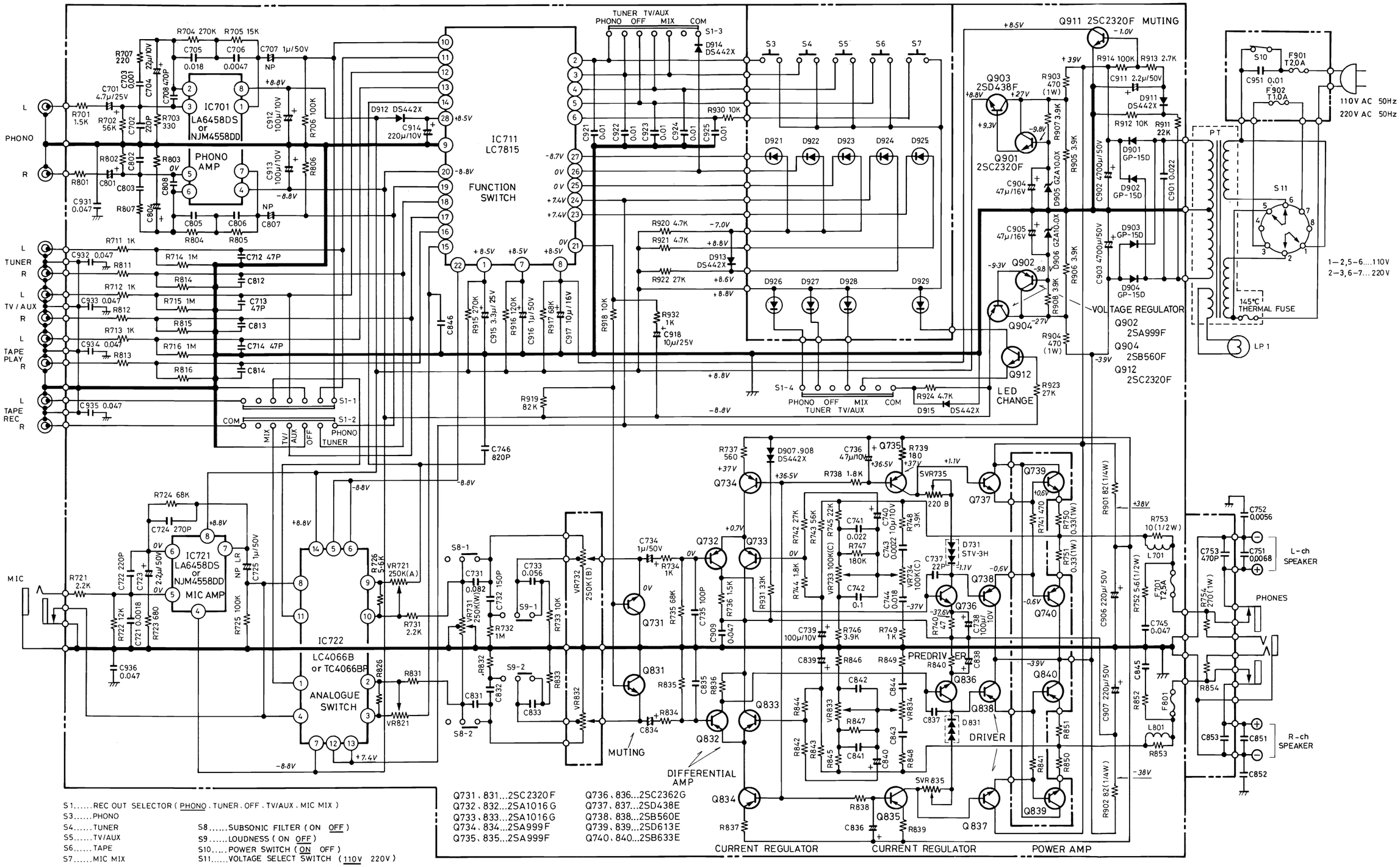
Ref. No.	Part No.	Description	Q'ty
PACKING & ACCESSORIES			
	141-6-133T-37203	Individual Carton (Excp. Italy)	1
	141-6-133T-37207	Individual Carton (Italy only)	1
	141-6-144T-82500	Foam Plastic Case	1
	141-6-144T-82501	Foam Plastic Case	1
	141-6-231T-40500	Inner Polye Cover, Set	1
	141-6-410T-85800	Instruction Manual (Excp. Italy)	1
	141-6-410T-85801	Instruction Manual (Italy only)	1
CABINET & CHASSIS			
1	141-0-122T-45400	Front Panel Ass'y	1
2	141-0-125T-29200	Bottom Lid Ass'y	1
3	141-2-111T-53500	Cabinet	1
4	141-2-133T-16401	Compartment Lid	1
5	141-2-174T-12700	Stand	2
6	141-2-163T-89600	Rotary Knob, VR	3
7	141-2-163T-89700	Rotary Knob	1
8	141-2-160T-14000	Push Button	5
9	141-2-221T-10400	Bracket Panel	1
10	141-2-310T-77200	Bracket	1
11	141-2-315T-25800	Reinforcement	1
12	141-2-210T-41500	Bracket	1
13	141-2-126T-39503	Back Lid	1
14	141-2-315T-25600	Reinforcement	1
15	141-2-315T-25700	Reinforcement	1
16	141-2-310T-77100	Bracket	1
17	141-2-160T-13900	Push Button	2
18	141-2-160T-13700	Push Button	1
19	141-0-156T-32700	Knob Ass'y	1
20	141-2-153T-82500	Escutcheon	1
21	141-2-253T-32400	Joint	1
22	141-2-164T-30800	Slide Knob	1
23	141-2-247T-03600	Sheet	1
24	141-2-464T-11400	Fixer	1
25	141-2-445T-08701	Rubber Cushion	1
26	141-2-163T-89601	Rotary Knob, SW	1
27	141-2-464T-27600	Fixer	2
28	141-2-352T-60000	Spacer	1
29	141-2-247T-12100	Sheet 7 x 46mm	2
30	141-2-472T-01001	Lug	1
31	141-2-472T-01201	Lug	2
FIXING PARTS			
Y 1		Binding Hd. Tapping Screw 3 x 4mm	1
Y 2		Binding Hd. Tapping Screw 3 x 10mm	2
Y 3		Binding Hd. Tapping Screw 3 x 6mm	21
Y 4		Binding Hd. Tapping Screw 3 x 8mm	1
Y 5		Binding Hd. Tapping Screw 3 x 8mm	6
Y 6		Pan. Hd. Screw 2 x 3mm	2
Y 7		Binding Hd. Screw 3 x 4mm	2
Y 8		Binding Hd. Self Tapping Screw 3 x 6mm	5
Y 9		Binding Hd. Salf Tapping Screw 3 x 6mm	2
Y10		Binding Hd. Salf Tapping Screw 3 x 8mm	7
Y11		Binding Hd. Salf Tapping Screw 4 x 8mm	4
Y12		Binding Hd. Salf Tapping Screw 4 x 6mm	4
Y13		Pan. Hd. Screw W/Spring Washer 3 x 8mm	4
Y14		Washer 3 x 8 x 0.3mm	1
Y15	141-2-453T-02001	Washer	1
Y16		Binding Hd. Screw 3 x 6mm	2
ELECTRICAL PARTS			
51	4-243T-84973	Power Cord	1
52	4-300T-57400	Power Transformer	1
53	4-238T-19173	Switch, 110V/220V	1

Ref. No.	Part No.	Description	Q'ty
ELECTRICAL PARTS			
54((LP1)	4-612T-16372	Lamp	1
55	4-234T-10589	Fuse 2.5A F701,801 Speaker	2
56	4-234T-10588	Fuse T2A F901	1
57(S1)	4-238T-51300	Rotary Switch, Rec out	1
58	4-234T-10584	Fuse 220V, T1A	1
59	141-2-382T-10600	Terminal	1
60	141-2-368T-25200	Heat Sink, Power Trans	1
61	141-2-243T-09800	Base, Power Trans	4
62	141-2-327T-26100	Insulator, Power Trans	4
69	141-2-247T-10100	Sheet, Power Switch	1
70(C951)	141-2-135T-75700	Cover	1
71	141-2-135T-87400	Cover	1
AMP P. C. B. ASS'Y			
63	141-4-250T-51071	P.C.B. Ass'y, Amp	1
TVI	141-2-322T-73800	Shield Plate	1
	4-240T-07000	Socket, 6p PH TU TV/AUX	1
	4-240T-06900	Socket, 4p RCA Tape	1
S1	4-238T-25200	Switch, Rec out	1
	4-240T-11272	Socket, 5p	1
	4-240T-11273	Socket, 6p	1
	4-240T-11274	Socket, 7p	1
	4-240T-29573	Socket, MIC	1
S8,9	4-238T-55200	Switch, Loudness	2
	141-2-381T-04200	Bracket Fuse	4
	4-236T-21471	Plug	1
	4-236T-21473	Plug	2
L701,801	4-265T-07930	V H F Coil	2
VR721,821	4-220T-06000	Variable Resistor	2
VR731	4-220T-06100	Variable Resistor, Balance	1
VR733,734	4-220T-06200	Variable Resistor, Bass/Treble	2
SVR735,835	4-222T-73596	Semi-Variable Resistor	2
	4-237T-09900	Terminal Board, Speaker	1
IC711		IC LC7815	1
IC722		IC LC4066B	1
IC721		IC NJM4558DD)or	1
IC721		IC LA6458DS	
IC701		IC LA6458DS)or	1
IC701		IC NJM4558DD	
Q731,831		Transistor 2SC2320	2
Q732,832, 733,833		Transistor 2SA1016	4
Q734,834, 735,835		Transistor 2SA999	4
Q736,836		Transistor 2SC2362	2
Q738,838		Transistor 2SB560	2
Q737,837		Transistor 2SD438	2
Q901,911 912		Transistor 2SC2320	3
Q902		Transistor 2SA999	1
Q904		Transistor 2SB560	1
Q903		Transistor 2SD438	1
D731,831		Varystor STV-3H GR	2
D901,902, 903,904		Diode GP15 D	4
D911,912, 913,914		Diode DS442X	4
D905,906		Zener Diode GZA10X	2
D907,908		Diode DS442X	2
D915		Diode DS442X	1
	CAPACITORS		
C707,807		Electrolytic 1μF (Nonpolar) 50V	2
C701,801		Electrolytic 4.7μF 25V	2
C704,804		Electrolytic 22μF 10V	2
C912,913		Electrolytic 100μF 10V	2
C705,805		Mylar 0.018μF ±10% 50V	2
C706,806		Mylar 0.0047μF ±10% 50V	2
C702,802		Ceramic 220pF ±10% 50V	2
C703,803		Mylar 0.01μF ±10% 50V	2
C708,808		Ceramic 470pF ±10% 50V	2
C921,922, 923,924, 925		Ceramic 0.01μF +80–20%	5
C723		Electrolytic 2.2μF 50V	1
C725		Electrolytic 1μF (Nonpolar) 50V	1
C721		Mylar 0.0018μF ±10% 50V	1
C722		Ceramic 220pF ±10% 50V	1
C724		Ceramic 270pF ±10% 50V	1

Ref. No.	Part No.	Description	Q'ty
AMP P. C. B. ASS'Y			
	CAPACITORS		
C732,832		Ceramic 150pF ±10% 50V	2
C731,831		Mylar 0.082μF ±10% 50V	2
C733,833		Mylar 0.056μF ±10% 50V	2
C746,846		Mylar 820pF ±10% 50V	2
C735,835		Ceramic 100pF ±10% 50V	2
C737,837		Ceramic 22pF ±10% 50V	2
C745,845		Mylar 0.047μF ±20% 50V	2
C734,834		Electrolytic 1μF 50V	2
C906,907		Electrolytic 220μF 50V	2
C736,836		Electrolytic 47μF 10V	2
C738,838, 739,839		Electrolytic 100μF 10V	4
C742,842		Mylar 0.1μF ±10% 50V	2
C741,841		Mylar 0.022μF ±10% 50V	2
C743,843		Mylar 0.0022μF ±10% 50V	2
C744,844		Mylar 0.018μF ±10% 50V	2
C740,840		Electrolytic 10μF 10V	2
C911		Electrolytic 2.2μF 50V	1
C904,905		Electrolytic 47μF 16V	2
C915		Electrolytic 3.3μF 25V	1
C914		Electrolytic 220μF 10V	1
C916		Electrolytic 1μF 50V	1
C918		Electrolytic 10μF 25V	1
C917		Electrolytic 10μF 16V	1
C931,932, 933,934, 935,936		Ceramic 0.047μF +80–20% 50V	6
C909		Ceramic 0.047μF +80–20% 50V	1
C901	4-223T-13771	Capacitor 0.022μF ±20% 200V	1
C902,903	4-163T-08700 4-163T-08800	Electrolytic Capacitor Electrolytic Capactior } or	2
C712,812, 713,813, 714,814		Ceramic 47pF ±10% 50V	6
C941		Ceramic 470pF ±10% 50V	1
C751,851		Mylar 0.0068μF ±10% 50V	2
C752,852		Mylar 0.0056μF ±10% 50V	2
	RESISTORS		
	All Resistors are Carbon T-type ±5%, ¼W unless otherwise noted.		
R711,811, 712,812, 713,813		1K ohm	6
R714,814, 715,815, 716,816		1M ohm	6
R701,801		1.5K ohm	2
R702,802		56K ohm	2
R703,803		330 ohm	2
R704,804		270K ohm	2
R705,805		15K ohm	2
R706,806		100K ohm	2
R724		68K ohm	1
R723		680 ohm	1
R721		2.2K ohm	1
R722		12K ohm	1
R725		100K ohm	1
R731,831		2.2K ohm	2
R733,833		10K ohm	2
R732,832		1M ohm	2
R745,845		22K ohm	2
R746,846, 748,848		3.9K ohm	4
R749,849		1K ohm	2
R747,847		180K ohm	2
R742,842		27K ohm	2
R734,834		1K ohm	2
R735,835		68K ohm	2
R736,836		1.5K ohm	2
R737,837		560 ohm	2
R931		33K ohm	1
R738,838, 744,844		1.8K ohm	4
R743,843		56K ohm	2
R739,839		180 ohm	2
R740,840		47 ohm	2
R750,850 751,851		Metal 0.33 ohm P-type 1W	4

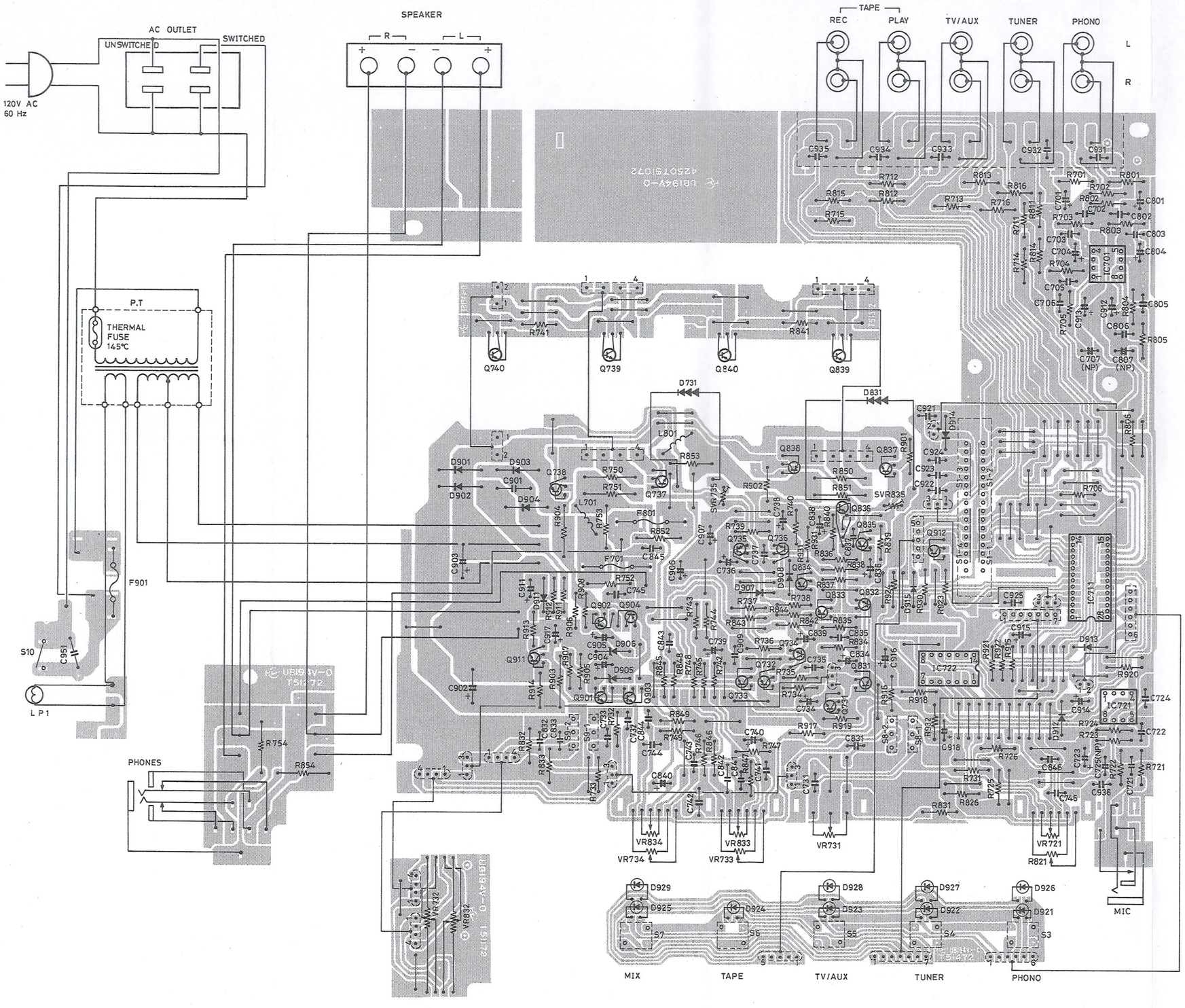
Ref. No.	Part No.	Description	Q'ty
AMP P. C. B. ASS'Y			
	RESISTORS		
R752,852		FP-Carbon 5.6 ohm P-type ½W	2
R753,853		FP-Carbon 10 ohm P-type ½W	2
R901,902		FP-Carbon 82 ohm P-type ¼W	2
R905,906		3.9K ohm	2
R907,908		3.9K ohm	2
R911		22K ohm	1
R912,918		10K ohm	2
R913		2.7K ohm	1
R914		100K ohm	1
R915		270K ohm	1
R916		120K ohm	1
R917		68K ohm	1
R919		82K ohm	1
R920,921, 924		4.7K ohm	3
R922,923		27K ohm	2
R930		10K ohm	1
R932		1K ohm	1
R903,904		Metal 470 ohm P-type 1W	2
R726,826		56K ohm	2
R707,807		220 ohm	2
VOLUME P. C. B. ASS'Y			
64	141-4-250T-51100	P.C.B. Ass'y, Volume	1
VR732,832	4-220T-02100	Slide Variable Resistor	1
HEADPHONE P. C. B. ASS'Y			
65	141-4-250T-51271	P.C.B. Ass'y, Headphone	1
	4-240T-13275	Socket	1
R754,854		Metal 390 ohm P-type ±5% 1W	2
C753,853		Mylar 470pF ±10% 50V	2
POWER TRANSISTOR P. C. B. ASS'Y			
66	141-4-250T-51300	P.C.B. Ass.y, Power Transistor	1
T739,839		Transistor 2SD613 Transistor 2SC1827 } or	2
T740,840		Transistor 2SB633 Transistor 2SA769 } or	2
R741,841		Carbon T-type 470 ohm ±5% ¼W	2
LED P. C. B. ASS'Y			
67	141-4-250T-51400	P.C.B. Ass'y, LED	1
S3,4,5,6,7	4-238T-45700	Switch	5
D921 ~ 929		LED SLC22UR Red	9
SWITCH P. C. B. ASS'Y			
68	141-4-250T-51571	P.C.B. Ass'y, Switch	1
	141-2-381T-04200	Bracket Fuse	4
S10	4-238T-30100	Switch	1
	4-223T-12100	Capacitor 0.01μF 400V	1
	141-2-382T-18900	Terminal	2

SCHEMATIC DIAGRAM



S1.....REC OUT SELECTOR (PHONO . TUNER . OFF . TV/AUX . MIC MIX)
S3.....PHONO
S4.....TUNER
S5.....TV/AUX
S6.....TAPE
S7.....MIC MIX
S8.....SUBSONIC FILTER (ON OFF)
S9.....LOUDNESS (ON OFF)
S10.....POWER SWITCH (ON OFF)
S11.....VOLTAGE SELECT SWITCH (110V 220V)

Q731 , 831...2SC2320F
Q732 , 832...2SA1016G
Q733 , 833...2SA1016G
Q734 , 834...2SA999F
Q735 , 835...2SA999F
Q736 , 836...2SC2362G
Q737 , 837...2SD438E
Q738 , 838...2SB560E
Q739 , 839...2SD613E
Q740 , 840...2SB633E

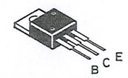


TRANSISTOR CONNECTIONS

Q731, 831, 901, 911, 912 ····· 2SC2320
Q732, 733, 832, 833 ····· 2SA1016
Q734, 735, 834, 835, 902 ····· 2SA999
Q736, 836 ····· 2SC2362

Q737, 837, 903 ····· 2SD438
Q738, 838, 904 ····· 2SB560

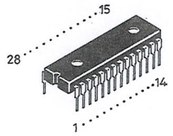
Q739, 839 ····· 2SD613
Q740, 840 ····· 2SB633



IC CONNECTIONS

IC701, 721 ····· LA6458DS or NJM4558DD

IC711 ····· LC7815



IC722 ····· LC4066B